Yes, one student's average weight will likely be closer to the rock's true weight than the other student's. Cameron, who weighs the rock 20 times and calculates the average, is likely to have a more accurate estimate of the rock's true weight compared to Jordan, who weighs the rock only 5 times.

The reasoning is based on the \*\*Law of Large Numbers\*\* and the concept of \*\*sampling variability\*\*.

\* \*\*Law of Large Numbers:\*\* This fundamental statistical principle states that as the number of trials (or in this case, measurements) increases, the sample mean (average) will converge towards the true population mean (the rock's true weight).

\* \*\*Sampling Variability:\*\* Each individual weighing will have some degree of random error (due to factors like slight variations in the balance scale or minor inconsistencies in how the rock is placed). The average of a few measurements will be subject to greater random fluctuations (higher sampling variability) than the average of many measurements.

In Cameron's case, with 20 measurements, the individual errors tend to "cancel each other out" more effectively. Some measurements will be slightly higher than the true weight, and some will be slightly lower. The average of a larger number of these measurements will more closely approximate the true weight due to this averaging effect.

Jordan, with only 5 measurements, has fewer opportunities for these errors to average out. The sample mean is more susceptible to being influenced by a few unusually high or low measurements, leading to a potentially less accurate estimate of the true weight.

Therefore, Cameron's average, calculated from 20 measurements, is expected to be a more accurate estimate of the rock's true weight because it benefits from the Law of Large Numbers, reducing the impact of random error through the increased sample size.